

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Junichi HAYAKAWA et al.

Serial No. 09/890,863

Filed: August 7, 2001

For: WOVEN FABRIC FOR LOUD-

SPEAKER DIAPHRAGM,

DIAPHRAGM FOR LOUD-SPEAKER

AND LOUD-SPEAKER



) Group Art Unit: 1771

) Examiner: J. Befumo

) CERTIFICATE OF MAILING

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) Robert M. Stampu

REPLY BRIEF

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Sir:

The *Examiner's Answer* mailed December 19, 2005, has been received and its contents carefully noted. This *Reply Brief* is filed within two months of the mailing date of the *Examiner's Answer* and therefore is believed to be timely. Accordingly, the Appellants respectfully submit that this response is being timely filed.

A. Whether claims 21-24 are indefinite.

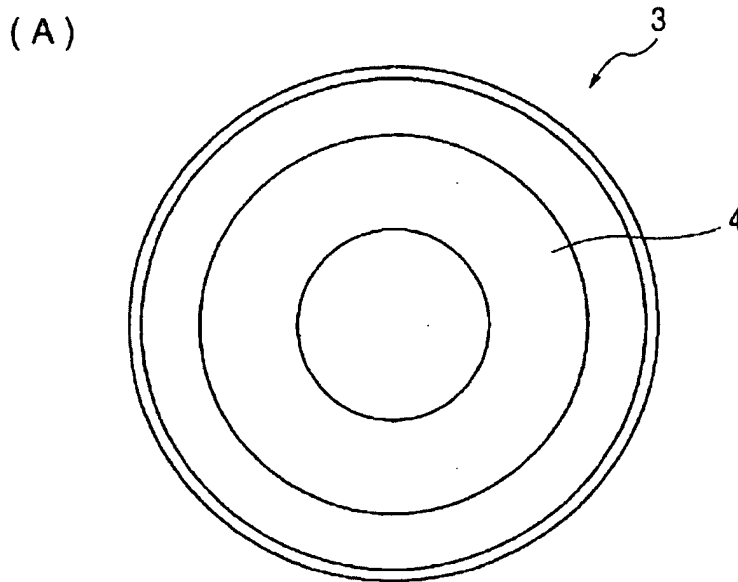
The *Examiner's Answer* continues to take the position that "it is unclear what structure is added to the claimed woven fabric by the use of the terms [diaphragm, loud-speaker or loud-speaker diaphragm] and hence what weight should be given the terms" (page 7). The Appellants respectfully submit that the terms diaphragm, loud-speaker and loud-speaker diaphragm are clearly defined in the present specification and Figures 6(A) and 6(B). In addition, the terms diaphragm, loud-speaker and loud-speaker diaphragm are relatively common terms that are readily understandable to one of ordinary skill in the art.

The following explanation was provided in the *Appeal Brief* filed March 4, 2005:

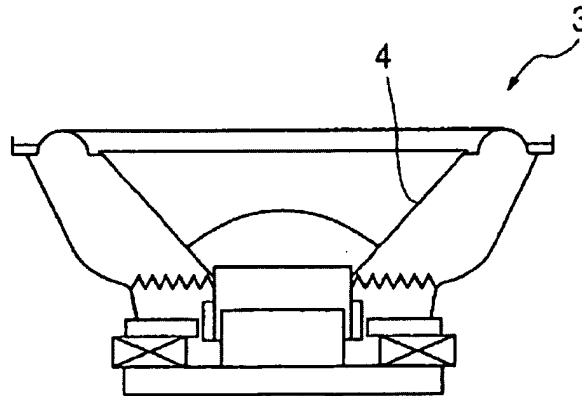
The descriptions in the present specification and in Figures 6(A) and 6(B) indicate that a loud-speaker is a sound producing device. Specifically, an example of a loud-speaker is shown in Figures 6(A) and 6(B) and is marked with reference number 3. The specification notes the following: "the above described woven fabric is used on the surface of the diaphragm 4 of the loud-speaker [3] ... The diaphragm 4 for the loud-speaker using the above described woven fabric for the loud-speaker diaphragm is installed in the main body of the loud-speaker 3" (page 13, paragraphs [0034] – [0035]).

Figures 6(A) and 6(B) are reproduced herein to facilitate understanding of the terms diaphragm, loud-speaker and loud-speaker diaphragm.

**FIG. 6**



(B)



Also, in page 3 of the *Amendment* filed July 23, 2004, in response to the Examiner's request during a personal interview held July 13, 2004, the Applicants submitted the following explanation of the term "diaphragm":

The Applicants respectfully submit that one of ordinary skill in the art would understand from the descriptions in the present specification and from Figures 6(A) and 6(B) that a diaphragm is that portion of a loud-speaker which vibrates to produce sound waves. Specifically, the Applicants respectfully submit that an example of a diaphragm is shown in Figures 6(A) and 6(B) and is marked with reference number 4.

At the time of the interview, it was understood that such definition would overcome the prior art rejections. However, instead of allowing the claims, the Examiner reversed the agreement reached in the interview, maintained a final rejection of the claims, reopened prosecution in order to assert what is believed to be a spurious § 112 rejection, and now refuses to construe the claims in a reasonable manner apparently in order to support the unreasonable interpretation of the present claims.

The Appellants respectfully submit that one of ordinary skill in the art would read the present specification, look at Figures 6(A) and 6(B), and recognize that the scope and weight of the terms "loud-speaker," "diaphragm for loud-speaker" and "loud-speaker diaphragm" is beyond that of a mere "woven fabric" such as the fabric for a cut resistant glove discussed in Weber. Also, one of ordinary skill in the art would be able to recognize that the diaphragm 4 and the loud-speaker 3 shown in Figures 6(A) and 6(B), and their corresponding illustrated exemplary structures, are examples of the terms "loud-speaker," "diaphragm for loud-speaker" and "loud-speaker diaphragm." Further, one of ordinary skill in the art would recognize that the terms "loud-speaker," "diaphragm for loud-speaker" and

speaker” and “loud-speaker diaphragm” would not necessarily be limited to the structure shown in Figures 6(A) and 6(B), but would necessarily include a minimum structure to perform a function equivalent to the examples shown in Figures 6(A) and 6(B). The minimum structure for the terms “loud-speaker,” “diaphragm for loud-speaker” and “loud-speaker diaphragm” is not explicitly defined in the present specification but would be readily known to one of ordinary skill in the art and would necessarily entail more than a mere woven fabric.

The *Examiner's Answer* appears to be concerned that the Appellants' statements do “not define what the minimum features present in a diaphragm or loud speaker are” (page 6). However, § 112 does not require that Applicants define the minimum features of generally well-known terms. If the terms “diaphragm” and “loud-speaker” were difficult to understand or unclear based on statements made during prosecution, then the Examiner might be correct to request clarification; however, that is not the case here. In this case, the meaning of the terms “diaphragm” and “loud-speaker” is clear and unquestionable, particularly in light of the references to Figures 6(A) and 6(B) and the overall context of the present specification. The Appellants have not given any indication that these terms be used in a context that changes their meaning. “Ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean exactly what they say” (MPEP § 2111.01). Therefore, the terms “diaphragm” and “loud-speaker” should be construed to mean exactly what they say and should not be construed only to mean a “woven fabric” as is apparently the Examiner's position.

Therefore, it is not proper for the Examiner to take the position that the terms “diaphragm” and “loud-speaker” are the same as a “woven fabric.” Rather, the Appellants respectfully request that the terms “diaphragm” and “loud-speaker” be construed in light of their generally well known meaning, and consistent with the present specification and Figures 6(A) and 6(B).

Although the terms “diaphragm” and “loud-speaker,” construed in this manner, may be broad, broad claim terms are not to be equated with indefiniteness. “As noted in MPEP § 2173.04, “Breadth of a claim is not to be equated with indefiniteness. ... If the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise

otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph.” The scope of the subject matter embraced by the present claims clearly includes a woven fabric for loud-speaker diaphragm (claim 19), a diaphragm for loud-speaker (claims 21 and 23), and a loud-speaker comprising a loud-speaker diaphragm (claims 22 and 24). The Applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims. Therefore, the claims comply with 35 U.S.C. 112, second paragraph.

The Appellants respectfully submit that claims 21-24, when read in light of the specification (including, for example, Figures 6(A) and 6(B)), are adequately described in the specification and definite. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112 are in order and respectfully requested.

B. Whether claims 19-24 are anticipated by U.S. Patent No. 5,233,821 to Weber, Jr. et al.

Based on the erroneous logic in the § 112 rejection, the *Examiner's Answer* continues to give no patentable weight to the terms “loud-speaker” or “diaphragm.” The *Examiner's Answer* appears to take the position that Weber’s disclosure of a woven fabric anticipates a loud-speaker, a loud-speaker diaphragm or a woven fabric for a loud-speaker diaphragm. The Appellants again disagree. Given a reasonable interpretation of “diaphragm” and “loud-speaker,” the cut resistant fabric of Weber (i.e. for a glove) cannot be construed as a loud-speaker, a loud-speaker diaphragm or a woven fabric for a loud-speaker diaphragm.

Also, during a personal interview held July 13, 2004, “it was understood that ‘a diaphragm’ is positively recited in claims 23 and 24 and that Weber does not teach a diaphragm as defined by the present specification” (page 3, *Amendment* filed July 23, 2004). Despite the agreement reached in the interview, the Examiner persists in taking the position that a “diaphragm” or a “loud-speaker” is somehow anticipated by Weber.

1. Whether claims 22 and 24 are anticipated by Weber.

Claims 22 and 24 positively recite a loud-speaker comprising a loud-speaker diaphragm. The Official Action has presented Weber, which appears to teach a fabric for a garment which is “useful for protection against fire and/or cutting.” In other words, Weber teaches a glove comprising a fabric with a PBO thread, etc. Weber has absolutely nothing to do with loud-speakers, either explicitly or inherently. Therefore, Weber does not teach a loud-speaker, either explicitly or inherently.

2. Whether claims 21 and 23 are anticipated by Weber.

Claims 21 and 23 positively recite a diaphragm for a loud-speaker. As noted above, the Official Action has presented Weber, which teaches, for example, a glove comprising a fabric with a PBO thread. In addition to having nothing to do with loud-speakers, Weber has absolutely nothing to do with diaphragms for loud-speakers, either explicitly or inherently. Therefore, Weber does not teach a diaphragm, either explicitly or inherently.

3. Whether claims 19 and 20 are anticipated by Weber.

Independent claim 19 recites “a woven fabric for loud-speaker diaphragm.” The *Examiner’s Answer* appears to continue to ignore the recitation of “for loud-speaker diaphragm” in determining whether Weber anticipates claims 19 and 20. Please incorporate the previous arguments on the subject, in particular those related to MPEP § 2111.02.

For example, please see MPEP § 2111.02, which cites Catalina Mktg. Int’l v. Coolsavings.com, Inc., 289 F.3d at 808-09, 62 USPQ2d at 1785 as follows: “[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention.”

Weber does not teach a woven fabric for loud-speaker diaphragm, either explicitly or inherently. Since Weber does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

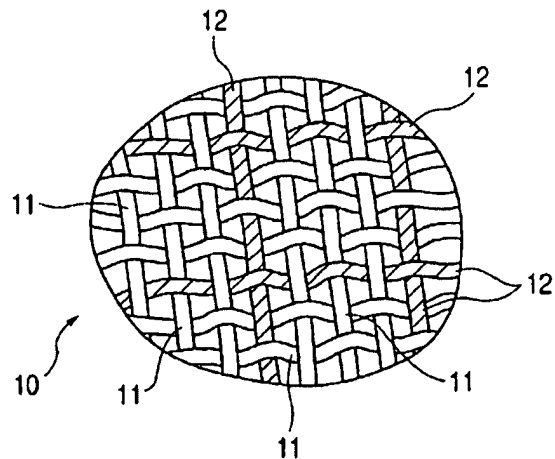
C. Whether claims 21-24 are obvious based on the combination of Weber and RD 35439.

Initially, it is noted that the *Examiner's Answer*, for the first time, introduces a complete copy of Research Disclosure (RD) 35439, pp. 678-684. (Only the abstract was previously provided.) No explanation is given in the *Examiner's Answer* as to why this additional disclosure is introduced at this time.

In any event, RD '439 appears to continue to be relied upon in order to show the use of PBO fiber in a speaker cone. However, it is noted that the teaching of RD '439 with respect to speaker cones (page 681) does not contribute any more relevant information than the Applicants' own disclosure at pages 1-4 of the present specification and Figure 7. In fact, RD '439 also teaches that the "speaker cone usually has a surface layer which is reinforced resin (the reinforced resin has the PBO fabric attached)." As described in detail in the present specification, this known use of PBO in a surface layer of a speaker cone leads to an undesirable lattice pattern 12, as shown in Figure 7 (reproduced below).

The present invention overcomes the deficiencies of the prior art (Figure 7) by providing a loud-speaker, a loud-speaker diaphragm or a woven fabric for a loud-speaker comprising a fiber with poor dye-affinity such as PBO and a fiber colored with dyes or pigments. Weber and RD '439, either alone or in combination, do not teach or suggest a loud-speaker, a loud-speaker diaphragm or a woven fabric for a loud-speaker comprising a fiber with poor dye-affinity such as PBO and a fiber colored with dyes or pigments.

**FIG. 7**



Weber appears to teach that PBO is used for cut resistance in garments, such as gloves, and that nylon wrap fibers are used for making garments "comfortable" (column 1, lines 28-29; column 6, lines 38-45; and column 7, lines 24-27). For example, Weber teaches making a cut-resistant glove from stainless steel wire, PBO and two wrap layers of dyed polyester (Glove 1 in Table 2). However, Weber does not teach or suggest anything at all to do with speakers, much less why one of ordinary skill in the art at the time of the invention should have used a woven fiber comprising a fiber with poor dye-affinity such as PBO and a fiber colored with dyes or pigments in the fabric of a speaker cone. Weber's concerns over comfort are not relevant to the speaker cone of RD '439. As such, the *Examiner's Answer* has not provided a reason from the references that would have suggested why one would have been motivated to combine or incorporate portions of the disclosure of Weber into the speaker cone of RD '439.

Neither RD '439 nor Weber teach or suggest the problem of a lattice pattern in conventional PBO fabrics used for loud-speaker diaphragms. The *Examiner's Answer* has not shown that Weber is in the field of applicant's endeavor or that Weber is reasonably pertinent to the particular problem with which the Applicants are concerned. The Applicants respectfully submit that Weber's concerns over comfort in cut-resistant fibers are not reasonably pertinent to the speaker cone of RD '439 or the features of the present invention.

The *Examiner's Answer* appears to rely on the fact that RD '439 teaches use of PBO in a wide variety of products including "ballistic, cut resistant, and fire resistant applications" (page 11) as some sort of evidence that one would have been motivated to combine RD '439 and Weber to achieve the claimed invention. However, Weber is not at all directed to speaker cones. Therefore, one of ordinary skill in the art might have looked to Weber to modify the cut resistant garments in RD '439, but concerns over comfort would not have been obvious from the descriptions in Weber or RD '439 for use with a speaker.

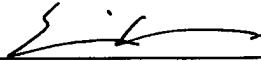
For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

For all of the above reasons, the present application is believed to be in condition



condition for allowance and favorable reconsideration is respectfully requested. If the Examiner feels further discussions would expedite prosecution of this application, she is invited to contact the undersigned.

Respectfully submitted,



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